--Part Two--

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ISLAND OF PORTO RICO

OBSERVING TRAVELER'S VIEW OF UNCLE SAM'S NEW SWITZERLAND.

Its Striking Scenic Beauties, Its Climate and What It Will Do for Broken-Down Business Men.

A SANITARIUM FOR INVALIDS

NEARLY A MILLION PEOPLE GET THEIR LIVING FROM THE SOIL.

Visit to Uncle Sam's Big Vaccine Farm—Army Surgeons Inoculate Cattle by the Thousands.

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SAN JUAN, Porto Rico, June 25.—Uncle Sam's West Indian garden patch! How shall I describe it? It is different from anything that has been published concerning it. It has more curious features than any part of the South American continent where I have been traveling for the past year, and a richer soil than almost any part of the world.

I came to Porto Rico on the government transport McPherson and have already crossed the island from one side to the other, making many excursions through the interior. The island is a revelation to me. I have never seen a country in which nature has done so much to make a pleasant home for man.

Porto Rico is a combination of the beauties of the tropics and temperate zone. It is the new Switzerland of Uncle Sam's dominion. It lacks perhaps the grandeur of the Alps or the Rockies, but its quiet semi-tropical beauties more than make up for lack of snows and gigantic rocks. Sometimes in going over it I am reminded of Japan, and again I am carried back to the mountains of Korea or the hills of China. There are silver streams, with thatched huts clinging to the sides of the hills down which they run; there are regions which equal the Blue Ridge mountains in their soft, hazy beauty, and other parts in which were it not for the bananas, the cocoanut palms, the breadfruit trees and other tropical wonders you might imagine yourself at home in some of the most beautiful of our rolling lands.

Before I describe my tour of the island let me give you a bird's-eye view of it. Suppose we could attach ourselves for the purpose to the tail of one of our Weather Bureau kites, which, I believe, mount higher than any other kites made by man, and fly over it. We should see a great rectangular body of blue land rising, as it were, out of some of the quietest waters of the globe.

Porto Rico is about 1,400 miles from New York on the boundary between the Atlantic ocean and the Caribbean sea.

It lies between the islands of Santo Domingo and St. Thomas. It is so near the latter island that you can steam there in about six hours, and so far east of Cuba that it takes our best transports two days to go from Ponce, on the south, to the city of Santiago.

Porto Rico, as we see it from our kite, is a mass of rolling hills. With the exception of a light green fringe bordering the coast it is all hills and valleys. And such hills and such valleys. The hills slope in places like walls, and the valleys are gigantic capital V's, with mountain streams dashing through them. Everything is covered with green, the dark shades of the mountains largely composed of coffee, tobacco and bananas, while the sickly green of the coastal plains comes from the sugar plantations.

In looking at the island you see that the hills rise higher in the center. It is divided by a mountain chain, which runs through it from west to east, branching out near the end in two spurs. This ridge looks just like a pitchfork with two great tines and a long handle. The joint of the fork is about sixty miles from the western end of the island, and each of the tines is about forty miles long. Not far from where they join one green mountain rises high above the others. This is El Yunque, or the "Anvil," the highest point in Porto Rico. It is 3,600 feet above the level of the ocean and you can see it far out in the Atlantic and in the Caribbean.

WHERE ATLANTIC IS DEEPEST.

It is the top of the mountain chain which, rising out of the sea, forms the Antilles. These islands are, in fact, merely the peaks of a great mountain range which extends far down into the bed of the ocean. If the water could be taken away or walled off, you would here have some of the highest mountains of the globe. The deepest part of the Atlantic is just north of Porto Rico. In coming to San Juan I sailed over Brownson's Deep, the bottom of which is five miles under water. It was at the point in the ocean plain where the land rises and finally culminates in El Yunque. If you could shut the sea off from this point the top of Porto Rico would be higher than any mountain in the Andes or the Rockies. It would be higher than anything in the world outside the very highest of the Himalayas. The same mountain chain springs up out of the water in Cuba to a distance of eight thousand feet above the sea, and in Santo Domingo, where it is the tallest, to eleven thousand feet. It rapidly falls toward the east, and in St. Thomas is rises only half as high as Porto Rico above the water.

I have called Porto Rico a garden patch. It is little more than that in size compared with the United States. It is so small it would hardly be a mole on the face of Texas. It would take just about 1,000 Porto Ricos if they could be sliced off and patched together to make a crazy quilt covering the United States. It is only three times as big as Rhode Island, about half as big as New Jersey and little less than half the size of Massachusetts. You could put ten Porto Ricos into Indiana, and if you cut it up into squares it would be only sixty times the size of the District of Columbia. Its average width is about as great as from Washington to Baltimore, and its length is not much greater than from Baltimore to Philadelphia. Were it level you could walk from one end of it to the other in three days and across it in one. On a bicycle you could travel over it in a few hours from coast to coast.

THE PEOPLE SWARM.

Notwithstanding its smallness, however, it is more thickly populated than any of our States except Massachusetts and Rhode Island. It has 814,000 people, or 223 to the square mile. A square mile is 640 acres. It is just a section of land. On every section of Porto Rico there are 223 people, and on every quarter section, or 160-acre farm, there are living on the average about fifty-four souls.

This is so notwithstanding the island has almost no manufactories. The people all live off the soil, and hence their condition cannot be compared with that of the people of our thickly settled manufacturing States, where there are so many large cities.

As it is Porto Rico has twice as many people to the square mile as the State of New York; twice as many as Pennsylvania and three times as many as Indiana or Illinois; six times as many as Missouri or Georgia and almost nine times as many as Louisiana. With such conditions it would seem a poor place for our farmers, who need at least a square mile to turn around in.

I see it stated that there are 200,000 people living in the cities of Porto Rico. I don't believe it. The country has only three cities of any size, and all the towns are overestimated. San Juan has, it is said, 37,000 people, but if so half of these live in the suburbs. By the estimates of the health officers, who made a careful canvass, there are only 16,000 people living inside the walls, and this section constitutes the city proper. Mayaguez has perhaps 10,000 people and Ponce between 20,000 and 30,000.

The most of the so-called cities of Porto Rico would be considered little more than villages in the States. The land is divided up into municipalities, but each municipality contains not only the village by which it is governed, but all the people living for miles around, so that a town or 500 or 1,000 is often put down as having from six to ten times that number. I find, in fact, the figures and statements put down in the books as to matters Porto Rican full of errors. They are made up from unreliable data, and the most of them come from Spanish books from fifty to a hundred years old.

THE CLIMATE.

Take, for instance, the climate. About a generation ago some Spaniard wrote that Porto Rico was a country of catarrh, consumption and bronchitis. He stated that the hot, moist climate caused dysenteries and fevers and gave the land a bad name as to health. This statement has to a large extent been copied and has created a serious misimpression. Our army surgeons tell me that the contrary is the truth, and I find that the Americans who have come to Porto Rico have, as a rule, improved in health.

Take myself. When I left Washington I was considered troubled with the nasal catarrh for which that city is famous. I brought with me an atomizer and other remedies. The moment I landed at San Juan my catarrh left me and I have not had a sign of it during my stay here. One of the captain quartermasters has had a similar experience, and I have met a number of people who have been cured of catarrh and bronchitis since landing in Porto Rico.

I was talking to-day with Mr. Harrison, the manager of the San Juan & Rio Piedras Railroad, as to climatic conditions. Said he:

"I think Porto Rico will eventually be a sanitarium for Americans who are broken down nervously. Take my own case. I was afflicted with nervous prostration when I was in Chicago. I could not sleep and could not work. I have improved every hour since I came to Porto Rico and I have been at my desk from 8 in the morning until 6 every day. I am doing what would naturally be wearing work. It is, you know, the organization of this railroad, but it does not seem to affect me. Every one sleeps here.

"There is another thing about the climate," continued Mr. Harrison, "that should be contradicted, and that is as to consumption. I have looked for it and I cannot see many evidences of it. In our streets cars we do not have the disgusting hawking and spitting that you find in the United States. You will not see it on the streets and I don't believe that the disease exists."

It is not hot here except in the middle of the day, and then no warmer than in the United States. I doubt whether Porto Rico ever gets so hot as some parts of Ohio and Indiana in the summer, and there is no question but that the Porto Ricans would roast in Washington in July and August. The air here is full of moisture but there is a breeze always blowing which makes it rather pleasant than otherwise. The average daily temperature the year around is about 80 degrees, and here at San Juan the mean monthly temperature deduced from observations of more than twenty years is less than 70 degrees Fahrenheit. In this period the thermometer only rose thrice to 90 degrees and it never fell below 57 degrees.

With so much humidity even this heat would be oppressive if it were not for the breezes which come from the north Atlantic. They are full of ozone and they stimulate you like a cocktail. I find that I am daily doing too much, tiring myself out before I know it, and only realizing that I am worn out when I sit down. This is especially so on the coastal plains. Further back on the high lands the air is cooler and more stimulating. In fact, I should say that Porto Rico is fully as healthful a country as any of our Southern States.

WHOLESALE VACCINATION.

And this brings me to the question of the smallpox, which has been reported as raging down here this year. There have been some cases and the most of them have been removed to an island near San Juan or put into hospitals apart from the rest of the people. The poor among the Porto Ricans herd together in such a way that it is a wonder the whole island is not infected with the disease. I will describe their life later. At present I believe there are no smallpox cases left.

The most remarkable thing in connection with the smallpox was the vaccination of the whole population under our army surgeons. When I arrived in San Juan every man, woman and child had sore arms. I saw sore arms on every country road. Sore-armed men worked in the fields, sore-armed women stood at the doors of the houses with sore-armed babies in their arms, and I saw them by hundreds in every city and village as I traveled through the interior. I venture that there were at least 800,000 sore arms here at that time.

In many cases the vaccination took so seriously as to make large scars, and it was not uncommon to see babies with scabs on their arms as big as a quarter of a dollar. In going through the poorest quarters of the cities and studying the life there I pretended at times to be a government inspector, and took a look at the arms of the people as an excuse for entering the houses to see how they lived, and I failed to find any who were not more or less afflicted.

The vaccination of this enormous number within a few weeks was one of the great feats of modern surgery. A few months after Uncle Sam took possession it was found that smallpox had broken out and that only a few in every thousand of the population had been vaccinated. It was decided that all must be inoculated at once. Major Azel Ames, one of our army surgeons, was chosen to take charge of the work, and he has accomplished it in a way that will be one of the wonders of medical history.

In the first place regulations were sent out providing that a man could not get work or do business of any kind without he was vaccinated, and that all the people must come to certain stations over the island and submit their arms to be scratched. The penalties were such that they came in hordes, and to-day I doubt if there are one hundred unvaccinated men, women and children on the island.

The work was carried on largely by the native doctors, under the direction of our surgeons, and thousands were treated in a day. In cases where the first vaccination did not take a second vaccination was required, and, all told, the vaccination must have amounted to more than a million.

VACCINATING CATTLE.

The supplying the vaccine matter for this work was a serious undertaking. At first vaccine points by the thousand were imported from the United States. The long sea voyage destroyed the virus and Major Ames found that he would have to make his own vaccine matter here.

For this reason he tried to vaccinate the Porto Rican cattle, but the results at first were unsatisfactory. Our cattle when vaccinated develop blisters and sores just like those which appear on the arms of human beings when so inoculated. The matter which oozes out from these sores is put upon the points used for vaccination of human beings. The Porto Rican cattle when vaccinated formed hard round scabs without pus. At first Dr. Ames thought that the operation had been of no effect. By squeezing the scabs, however, he discovered that they produced drops of vaccine matter and that from these he could make the points required.

The next thing was to establish a vaccine farm. He did this near Coamo Springs and in a few weeks had here the largest vaccine farm on record. He secured about 2,000 animals ranging, from eight months to one year old. The vaccination did not injure the cattle, and the big stock dealers of the island furnished them for nothing, on the simple condition that they were to be returned in good order.

Each of the animals was first examined to see that it had no tuberculosis or other diseases. Its temperature was taken again and again, and it was given a place on the government record. When vaccinated it was numbered with a zinc tag, and the number of vaccine points which were made from it were marked to correspond with this tag, so that an exact record of every point could be had.

During my stay at Coamo Springs I learned something of how the beasts were vaccinated. Each animal, after being tested and found free from disease, is brought up beside a folding table, the top of which stands perpendicularly against the side of the animal. The beast is now tied to the table, and by a twist the top is raised and laid horizontally on the legs of the table with the beast on top of it.

Now the doctors shave all the hair from a place as big as your two hands on one side of the belly, exposing the skin, which is as soft and tender as that of a child. This is scraped for a time with a sharp knife until the blood shows through the skin, and upon the sore spot the vaccine matter is rubbed. The animal is then turned over and a spot upon its other side is vaccinated in the same way.

It is found that nearly all the animals take, and Dr. Ames tells me he has obtained as many as 2,000 points from a single beast. One of the queer things about the farm is the method of distinguishing the cattle vaccinated from day to day. Those which are treated one day have their horns painted red, those of the next day have their horns painted blue and those of the third day yellow. In this way the groups can be easily distinguished and the vaccine matter gathered at just the right time.

FRANK G. CARPENTER.

AN AMERICAN SILK WORM.

Polyphemus Moth Spins a Cocoon in Every Way Perfect.

E. A. Samuels, in National Magazine.

An American silk worm? Why not? We have ten or more native species all of which produce a fiber of delicate texture and beautful luster, but unfortunately the cocoons are for various reasons of small commercial value.

For example, the caterpillar of the great Ceropia moth, one of the largest and handsomest of all varieties, spins a cocoon which is open at one end, which opening prevents the reeling of a perfect thread. The Luna, a moth that we sometimes find in our rambles through the woods, makes a cocoon that is too frail and weak to be of much value to the silk culturist.

But we have one native species, the Polyphemus moth, whose larva spins a large, dense cocoon, which is in every way perfect, its fiber being very strong and glossy. This beautiful moth measures from five to six inches across its expanded wings and is much more common in our oak woods than most people imagine. Its color is a dull ochre-yellowish, clouded somewhat with black in the middle of the wings.

The margin of the wings has a gray stripe, and near their hinder margin is a dusky band edged with reddish white. On each side of the wings is a transparent eye-like spot, surrounded by black and yellow rings, and also a blue spot which shades it into black.

This moth has been reared in large numbers in captivity, and the silk obtained from its cocoons has been woven into some of the most beautiful fabrics.

The value of this species as a silk producer was discovered in 1860 by an enthusiastic naturalist named Trouveliot. After a number of years of unsuccessful effort he obtained enough cocoons to enable him to establish their value, and he then proceeded to start a silkworm-rearing plant in Medford, Mass. He was so successful that in 1865 he had probably over a million of them feeding on five acres of scrub or brush oaks, which were covered with netting to prevent the destruction of the worms by birds. A visit to Trouvellot's establishment impressed one with the magnitude of the work that was in progress and the patient industry of the ardent Frenchman.

The polyphemus moths are different in their habits from the mulberry-feeding moths and emerge from the cocoons from about the 20th of May until July; they immediately pair and the female proceeds to lay her eggs. These are about three hundred in number and are scattered here and there on the under side of oak leaves and twigs.

The caterpillar is hatched in ten or twelve days, and it soon begins to feed. When first hatched the worm is, of course, very small, but it eats voraciously and grows with astonishing rapidity and is fully grown when about fifty-six days from the egg.

Mr. Trouvellot kept accurate memoranda concerning the diet of these worms, and he found that they ate on an average not less than one hundred and twenty oak leaves, weighing three-fourths of a pound, and drank not less than one-half an ounce of water.

During the fifty-six days of its caterpillar life the worm moults or changes its skin five times, its dimensions increasing at each moult, until finally it attains a length of about three inches, slightly larger than the Chinese species.

Having attained its full size, it next spins a cocoon. The silk of which the cocoon is made, exudes from a tubelike organ attached to the mouth; it issues in two streams, from the reservoir on each side of the body, which are united in one thread. As it first flows it is in the form of a sticky fluid, which hardens when it is exposed to the air.

This caterpillar is different from the ordinary silk worm insomuch as it is independent and can take care of itself. It very skillfully draws two leaves together by throwing the silk around the edges, and by shortening the strands the patient worker brings them into the desired rolled-up position for the reception of the cocoon. In making this the worm moves its head about in different directions, and these movements according to Mr. Trouvellot number 254,000.

There is no doubt that the cocoons of this moth may profitably be raised, the abundance and general diffusion of food upon which the worm feeds being an important factor in the economic culture of the insect.

The Chinese silk worm requires for food the leaves of the muiberry tree, and the culture of that species is of course limited to those who have mulberry plantations, but, as before stated, this objection does not apply to the American silk worm, for there is an unlimited supply of its favorite food always available.

Other silk growers than Trouvellot successfully raised the Polyphemus in large numbers in captivity and the silk they produced was of the best quality.

In view, therefore, of the fact that the immense quantities of raw silk which we use is almost entirely of foreign growth, it would seem that, possessing as we do a native silk worm which spins abundantly a thread of most desirable texture, a worm that is hardy and healthy, one that can be reared and fed at a minimum of cost; we ought to develop a profitable industry in its culture, which would give lucrative employment to women and children in localities that are adapted to this kind of business.

CIENFUEGOS IS MODERN

THE MOST IMPORTANT CITY ON THE SOUTHERN COAST OF CUBA.

A Rich Sugar and Tobacco-Growing Region—Knights of the Road Who Need to Be Gathered In.

Special Correspondence of the Journal.

CIENFUEGOS, June 7.—This newest city of Cuba, founded during the present century, is much more Americanized than any other on the island. It was created by the sugar trade and includes a large number of American and English planters, merchants and shippers. I think it was in the year 1818 that its name was bestowed, not, as is generally stated, because of Columbus's remark when he sailed this way and saw many Indian fires along shore, "Mira! cien fuegos!" (Look! a hundred fires!), but in honor of Senor Don Jose Cienfuegos, a Spanish hidalgo who was then the governor general of Cuba. Instead of the narrow, crooked, ill-paved cow paths that distinguish its three-century-and-odd-old neighbors, Havana, Matanzas, Santiago and Trinidad, Cienfuegos's streets are broad, level and well paved, laid out at right angles with the regularity of a checker board and illuminated with gas and electricity. To tell the truth, the very newness of the town, its freshly painted two-story houses and commonplace, "modern improvements" are somewhat disappointing to the traveler, who feels that he did not come so far to see what he has everywhere at home, and considers himself defrauded of the musty picturesqueness of Nueva Espana which he had a right to expect. Bright, clean and progressive, with its population now reckoned at 42,000, the seaward outlet of the finest sugar-producing province of Cuba and the terminus of the most important railway line, it is by all odds the best business town in southern Cuba, and is therefore bound to attract the greatest number of Americans. Its harbor—a deep inlet behind the sheltering cays of Doce Leguas, innumerable wooded islets stretching along the south coast, which Columbus named the "Queen's Gardens,"—is the safest, deepest and cleanest, if not the largest, that indents Cuba. It is one of the few in Spanish America which permit vessels of largest tonnage to come up to a wharf and land passengers over a gangplank as in New York without the aid of the troublesome but omnipresent small boats. All the steamship lines that ply the Caribbean sea and Spanish main make this a frequent port of call, and the wonder is why Spain left it so comparatively undefended while ports of far less consequence and more difficult of access have their morros and long lines of fortifications. I suppose the reason was because flush days were over in the mother country before Cienfuegos was born, and, being short of cash, she adopted her usual manana plan of thinking about securing the stable door after the steed had been stolen.

RICH SUGAR PLANTATIONS.

La Opinion, the leading local newspaper, asserts that before the war the annual export of sugar from Cienfuegos was 600,000 hogsheads, and that tobacco was not far behind. Some of the richest plantations of the island lie a little way back of the port, and connected with it by rail or water, and what it will become in the radiant future, under American fostering and with abundant capital to develop the incomparable resources of the surrounding country, it requires neither a prophet nor the son of a prophet to foretell. The three considerable rivers that empty into Cienfuegos bay—the Canudo, Salude and Danaje, each navigable some distance inland—are of great consequence in a land so destitute of good roads. Bridle paths run off in all directions—toward Santiago on the east, Trinidad on the west and Villa Clara on the north, connecting with the robber-infested trails of the central mountains. It is a matter of history, too frequently stated to need repetition here, that since time out of mind banditti have made these trails useless for any business purpose but their own. Even since the war and American occupation travelers have been captured by knights of the road and held for ransom, and a few years ago it was so common an occurrence as hardly to cause comment. Terrible tales are told of tortures inflicted by the robbers upon those whose friends failed to pay promptly the sums demanded. Perhaps a finger, an eye, or an ear of the captive would arrive by special post as a gentle hint to his relatives of what might be expected to happen next unless the money was quickly forthcoming, followed by other portions of the victim, until it was known beyond doubt that there was not enough left of him to be worth paying for. The last authenticated case of this sort was that of Senor Manuel De Alvarez, a merchant of Villa Clara, who started for Cienfuegos with a small escort, presumably to buy goods. Not one of the party lived to reach his distination. Most of the escort were killed in the first brush with the robbers and the others deliberately murdered, being poor men, from whose relatives no ransom could be obtained, as even these gentry recognize the truth of the old saying that blood cannot be squeezed from a turnip. After a few days Senor Alvarez's family received a written demand for 20,000 pesas, embellished with drawings of skulls and crossbones worthy the Kuklux Klan, accompanied by the assurance that unless the money was deposited in a specified place before a given date his life would pay the forfeit.

HORRIBLE WARNINGS.

A week later a stranger knocked at the door of the casa De Alvarez, in Villa Clara, delivered to the wife of the prisoner a small box and galloped away. Opening the package, with her baby in her arms, what was the lady's horror to find inside two toes and five bloody finger nails, evidently torn from their roots, and a note signed by her husband's name, begging her, for God's sake, to rescue him at any cost. The distracted woman did her best to sell the store and all she possessed, but nobody was buying property in those troubled times. She begged on her knees of the alcalde and everybody she knew, but the people were all so poor that her frantic appeals could not raise a tithe of the sum demanded. Meanwhile every day or two brought home another gruesome reminder of the unfortunate husband and father—maybe found in the morning, mysteriously tied to the doorknocker or tossed through the window bars as the family sat at dinner. An eye arrived in this manner, a foot, an arm; and when at length a ghastly human head, propped up on a stick against the open window, greeted her with reproachful eyes the wife went into convulsions, which ended in death, leaving a family of orphans to the charity of the town.

To get a good general idea of Cienfuegos the stranger should climb to the top of Reservoir hill, the only commanding point in the vicinity. For two or three miles the city stretches east and west, curving around the crescent-shaped bay, while countryward are the plantations, green as the greenest, with their neat villas and sugar mills and scattered groups of palms. The parti-colored casas—pink, blue, purple, green, often all the hues of the rainbow combined on one wall—are built in the usual Cuban style around an open courtyard in the middle, though there are more two and